SONY

3-765-944-22 (1)

FM/AM CASSETTE CAR STEREO

XR-7100

OPERATING INSTRUCTIONS

Before operating the unit, please read this manual thoroughly and retain it for future reference.

OWNER'S RECORD

The model number is located at the front, and the serial number is located at the top. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. XR-7100 Serial No._____

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INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna
Relocate this equipment with respect to the receiver
Move this equipment away from the receiver
Plug this equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems".

This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

FEATURES

Tuner section

- **Memory preset tuning function** allows you to store a total of 18 stations in memory.
- **Precise tuning** is possible with the digital synthesizer system.

Cassette deck section

- **High quality sound** is obtained in both tape transport direction, equipped with the dual adjust head.

General

- **4-speaker system operation** is possible with the built-in power amplifiers. (25 W × 4)
- **Easy operation** with the direct function system. You need not manually switch the function between radio reception and tape playback.
- **A graphic equalizer and an auxiliary source such as a TV tuner can be connected** to the built-in amplifier.

PRECAUTIONS

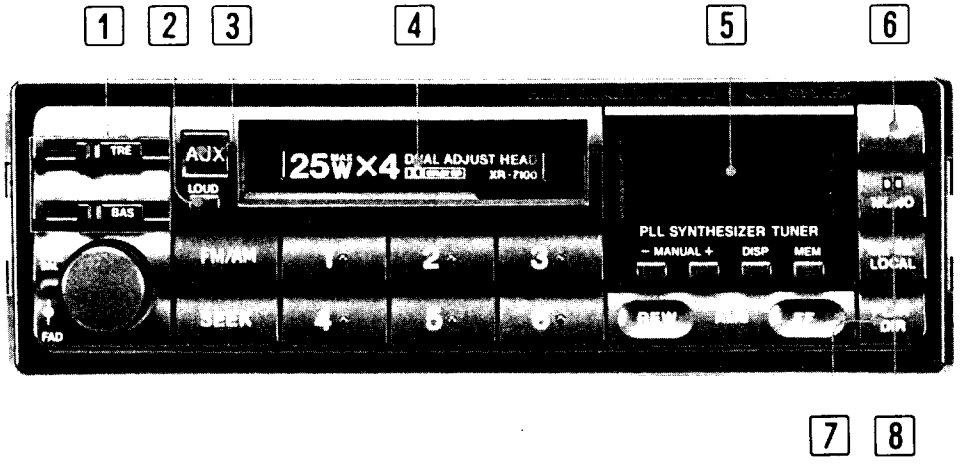
- If your car was parked in direct sunlight and there was a considerable rise in temperature inside the car, allow the unit to cool off before operating.
- If no power is being supplied to the unit, check the connections first. If everything is in order, check the fuse.
- If no sound comes from the speakers of a 2-speaker system, set the FADER control to the center position.

Protection circuit

The built-in power amplifier employs a protection circuit to protect the speakers if the amplifier malfunctions. When a protection circuit activates, there will be an abrupt loss of sound from the speakers.
Particularly, when a speaker with a low input impedance (less than 3.2 ohms) is connected to the unit, the sound will be discontinued. This, however, is not a problem. If this happens, turn the volume down a little.

If you have any question or problem concerning your unit that is not covered in this manual, please consult your nearest Sony dealer.

LOCATION AND FUNCTION OF CONTROLS



1 TRE (treble) control
BAS (bass) control

2 LOUD (loudness) button
Press to reinforce bass or treble especially when listening at a low volume.
To disengage the button, press it again.

3 AUX (auxiliary input) indicator
Lights up while an auxiliary source connected to the REM IN connector of this unit is input.

4 Cassette insertion door

5 Display window
See page 7.

6 ■⏏ (stop/eject) button
When pressed once, the tape stops.
When pressed again, the tape is ejected.

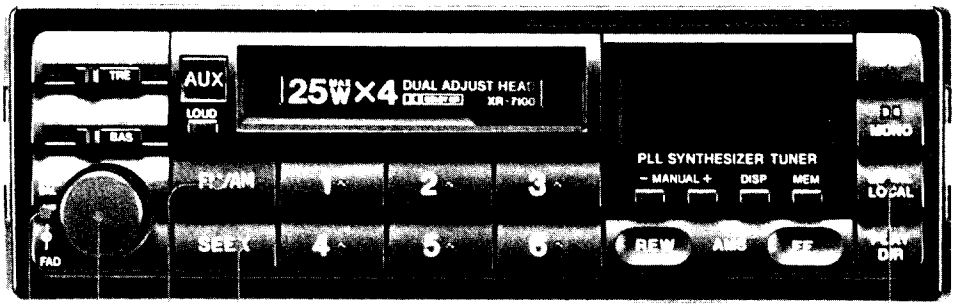
7 PLAY/DIR (playback/tape transport direction) button
When pressed while the tape is in the stop mode, playback starts.
When pressed during playback, the side of the cassette to be played back changes.

8 DD /MONO (Dolby noise reduction*/monaural) button

Operation mode	Function	
Tape playback	DOLBY button	Press to activate Dolby noise reduction system.
Radio reception	MONO button	Press to reduce noise during reception of a weak FM stereo program. The sound will be monaural instead.

To disengage the button, press it again.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.



9 10 11 12 13

9 FAD (fader) control

Turn to adjust the output volume of the front and the rear speakers.
To reduce rear speakers' volume, turn clockwise.
To reduce front speakers' volume, turn counterclockwise.

10 Power switch VOL (volume) PULL BAL (balance) control

Function	
Power switch	**Press** to turn on and off the unit.
VOL control	**Turn** to adjust the volume.
PULL BAL control	**Pull and turn** to adjust balance of the left and the right channel output.

11 FM/AM select button

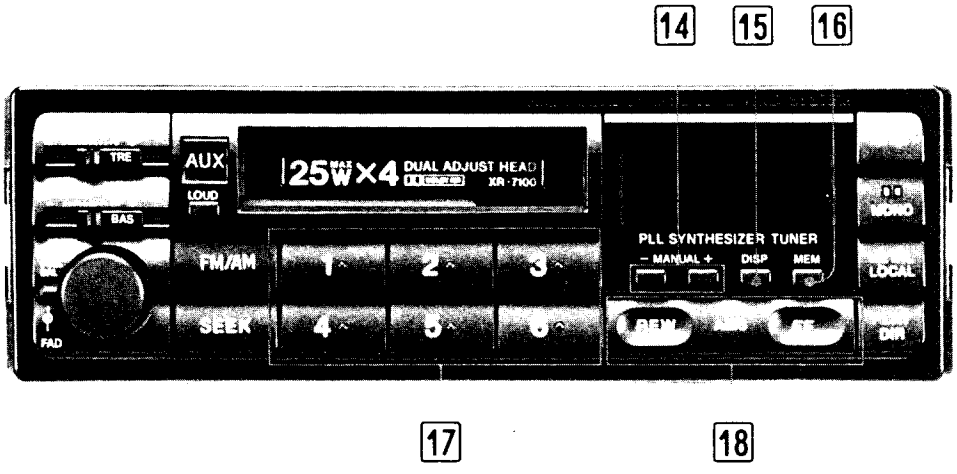
12 SEEK button

Press to search for the desired station.

13 METAL/LOCAL button

Operation mode	Function	
Tape playback	METAL button	Press when listening to CrO2 (TAPE II) or metal (TAPE IV) tapes.
Radio reception	LOCAL button	Press to eliminate interference from adjacent stations during reception of a comparatively strong station.

To disengage the button, press it again.



14 MANUAL + / – buttons
Press to tune in the desired station manually.

15 DISP (display) button
Press to change the display to the time display during radio reception.
Press again to disengage the button.

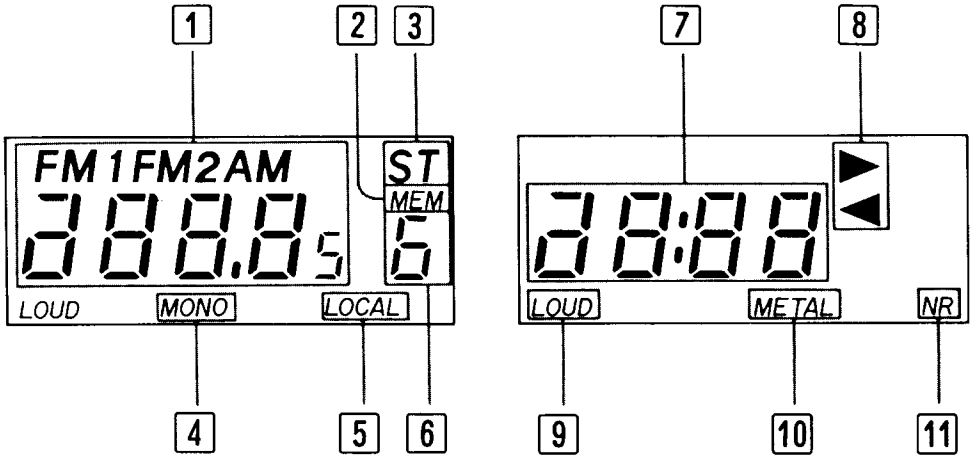
16 MEM (memory) button
Press to memorize the station.

17 Preset number buttons

18 AMS (Automatic Music Sensor)/FF (fast forward)/REW (rewind) button

Function	
AMS button	Press FF or REW once during playback to locate the beginning of a selection. (The "AMS" indication blinks.)
FF/REW button	Press FF or REW twice during playback for fastwinding.

Display window



During radio reception

1 **Band and frequency indicators**

2 **MEM (memory) indicator**
Lights up when the MEM button is pressed.

3 **ST (FM stereo) indicator**
Lights up when an FM stereo program of sufficient signal strength is tuned in.

4 **MONO indicator**
Lights up when the ◻◻ /MONO button is activated during radio reception.

5 **LOCAL indicator**
Lights up when the METAL/LOCAL button is activated during radio reception.

6 **Preset number indicator**
Shows the selected preset number.

During tape playback

7 **Time display**

8 **Cassette side indicator**
▶: The side facing upward is being played back.
◀: The side facing downward is being played back.

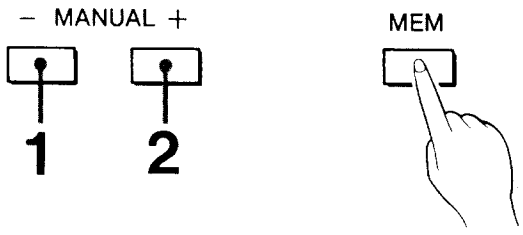
10 **METAL indicator**
Lights up when the LOCAL/METAL button is activated during tape playback.

11 **NR indicator**
Lights up when the ◻◻ /MONO button is activated during tape playback.

During radio reception and tape playback

9 **LOUD (loudness) indicator**
Lights up when the LOUD button is activated.

HOW TO SET THE CLOCK



1 Set the hour digits.
While pressing MEM, press MANUAL – repeatedly.

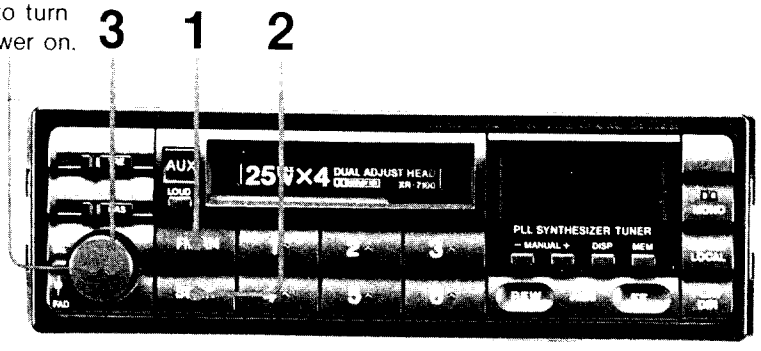
2 Set the minute digits.
While pressing MEM, press MANUAL + repeatedly.

The digits are advanced in sequence. To advance them rapidly, keep + or – pressed.

When you set minute digits
"00" comes after "59". The hour digits do not change then.

To adjust to zero second
Example: To set to 9:00 precisely
1 Set the time to 9:59.
2 As soon as it becomes nine o'clock, press the MANUAL + button while pressing the MEM button.
(Synchronize with the time tone of a radio program, etc.)

AUTOMATIC TUNING



1 **Press FM/AM to select the desired band.**

2 **Press SEEK.**
The unit automatically scans for a station and stops when a station is tuned in.
Repeat pressing the button until the desired station is tuned in.

3 **Adjust the volume.**

To stop the radio and listen to a tape
When a cassette is not inserted: Insert a cassette.
When a cassette is already inserted: Press PLAY/DIR.

To stop the radio and switch off the unit, press the power switch.

To eliminate interference during reception of a comparatively strong station
Press METAL/LOCAL.

To listen to the auxiliary source connected to the REM !N connector of this unit
Play the auxiliary source.
The radio sound will stop automatically, and the band and frequency indicators will change to the time display.

To listen to the radio again
Stop the auxiliary source.
The radio station you were listening to last is tuned in automatically. If not, turn off the auxiliary source.

MANUAL TUNING

1 Press FM/AM to select the desired band.

2 Press MANUAL + or − until the desired station is tuned in.

3 Adjust the volume.

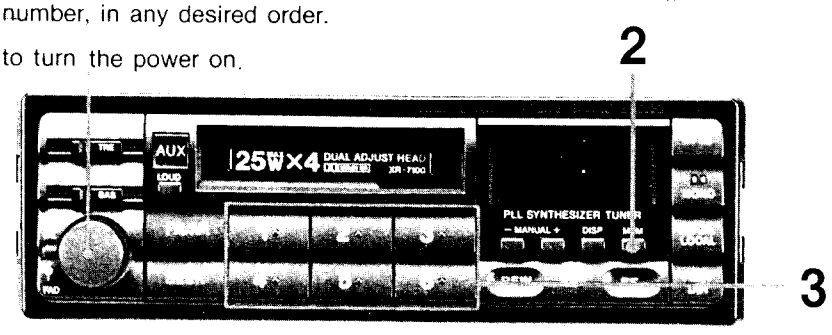
Warning
While driving, keep your eyes on the road and use the automatic tuning or the memory preset tuning!

MEMORY PRESET TUNING

TO MEMORIZE STATION FREQUENCIES

You can memorize a total of 18 stations (6 stations for each band), one on each preset number, in any desired order.

Press to turn the power on.



1 **Tune in the desired station.**

2 **Press MEM.**
"MEM" will light up on the display window.

3 **Press the desired preset number button, while "MEM" is lit.**

Repeat these steps for each station.

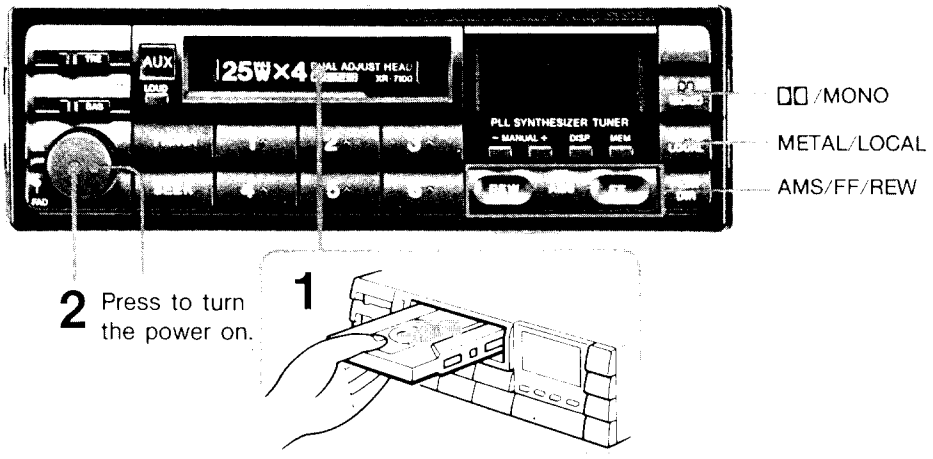
TO TUNE IN THE PRESET STATION

1 **Press FM/AM to select the desired band.**

2 **Press the desired preset number button.**

Important
Every preset number button has only one memory. The previously-memorized station will be erased when you enter a new station of the same band on the same number preset button.

If the "MEM" indicator goes off before pressing the number button
Press MEM again.



1 Insert a cassette.
Playback will start automatically.

2 Adjust the volume.

To listen to the other side of the cassette, press PLAY/DIR.
To stop playback and listen to the radio, press ■⏏. The unit enters the radio mode.
To stop playback and switch off the unit, press the power switch.

Side of the cassette being played back
This unit plays back both sides of the cassette repeatedly. The indicator on the display window shows which side of the cassette is being played back.

Indicator	Side
►	The side facing upward
◄	The side facing downward

To listen to the auxiliary source connected to the REM IN connector of this unit
Play the auxiliary source.
The tape will stop automatically.

To listen to the tape again
Press PLAY/DIR. If the XR-7100 does not operate, first turn off the auxiliary source and press PLAY/DIR.

TO LOCATE THE BEGINNING OF A SELECTION DURING PLAYBACK —Automatic Music Sensor (AMS)

Press FF or REW side of the AMS/FF/REW button, referring to the following table.

Desired selection	
Next selection	Press FF once.
Selection being played	Press REW once.

To select the tape type

Tape type	
CrO2 (TYPE II) Metal (TYPE IV)	Press METAL/LOCAL once to engage the button.
Normal (TYPE I)	Press METAL/LOCAL twice to disengage the button.

The unit automatically adjusts the equalization setting to the optimum according to the tape type.

To listen to Dolby NR-processed tapes

Press DOLBY NR /MONO.

Dolby NR (Noise Reduction) system reduces tape hiss noise in low-level, high-frequency signals. The system boosts these signals in recording and lowers them in playback. Therefore, the DOLBY NR system must be engaged when you listen to tapes recorded with this system.

Notes on the AMS

- The AMS may not operate correctly if:
  - —There is noise in the space between selections.
  - —The space is less than 4 seconds long.
  - —FF is pressed immediately before the following selection.
  - —REW is pressed immediately after the selection starts.
- The AMS will treat the followings as blanks.
  - —a long pause in the music
  - —a passage of low frequencies or very low sound level
  - —gradual increase or decrease of volume

Cassette care

- Avoid touching the tape surface of a cassette, as any dirt or dust will contaminate the heads.
- Keep cassettes away from equipment with magnets such as speakers and amplifiers, as erasure or distortion on the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures or moisture.

Note on the 120-minute cassette

The use of a 120-minute cassette tape is not recommended except for long continuous playback.

Cleaning the head

Clean the tape head every two weeks to enjoy optimum hi-fi stereo sound. Use a commercially available cleaning cassette.

SPECIFICATIONS

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION
13 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 60 - 20,000 Hz with no more than 1% total harmonic distortion per Car Stereo Ad Hoc Committee standards.

OTHER SPECIFICATIONS

Power amplifier section

Outputs	Speaker outputs (sure seal connectors).
Speaker impedance	3.2 - 8 ohms
Maximum power output	25 watts per channel at 4 ohms* (4 channels driven)
	* Measured at 14.4 V

Cassette player section

Tape	Prerecorded tape cassette
Head	Playback head
Tape track	4-track 2-channel stereo
Frequency response	30 - 18,000 Hz (±3 dB)
Signal-to-noise ratio	Dolby NR off: With type II, IV cassette 58 dB (A-weighted) With type cassette 55 dB (A-weighted)
Dolby NR effect	More than 8 dB (CCIR/ARM)
Wow and flutter	0.15% (WRMS)
Fast winding time	Approx. 100 sec. (with Sony C-60 cassette)
Crosstalk	Between channels: better than 30 dB

Tuner section

System	FM/AM superheterodyne tuner Computerized quartz-locked synthesizer system

FM tuner section

Tuning range	87.9 - 107.9 MHz
Antenna terminal	FM/AM external antenna connector FM/AM power antenna relay control lead
Intermediate frequency	10.7 MHz
Usable sensitivity	11.2 dBf (75 ohms)
Sensitivity at 50 dB quieting	16.4 dBf (75 ohms)
Selectivity	70 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 68 dB (mono)
Harmonic distortion at 1 kHz	0.3% (stereo), 0.2% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 - 15,000 Hz
Capture ratio	2.0 dB

AM tuner section

Tuning range	530 - 1,620 kHz
Antenna terminal	FM/AM external antenna connector FM/AM power antenna relay control lead
Intermediate frequency	450 kHz
Sensitivity	35 μV

General

Time display system
12-hour display

Tone controls
Bass ±8 dB at 100 Hz
Treble ±8 dB at 10 kHz

Loudness (at −30 dB)
+6 dB at 100 Hz
+5 dB at 10 kHz

Output lead
Power antenna relay control lead (ANT REM)
Remote control output lead (REM OUT, AMP REM)
Line output lead (LINE OUTPUT)

Input lead
Remote control input lead (REM IN)
Line input lead (LINE INPUT, AUX INPUT)

Power requirements
12 V DC car battery (negative ground)

Dimensions
Approx. 178 × 50 × 168 mm (w/h/d) ($7\frac{1}{8} \times 2 \times 6\frac{5}{8}$ inches) not incl. projecting parts and controls

Mounting dimensions
Approx. 178 × 50 × 153 mm (w/h/d) ($7\frac{1}{8} \times 2 \times 6\frac{1}{8}$ inches) not incl. projecting parts and controls

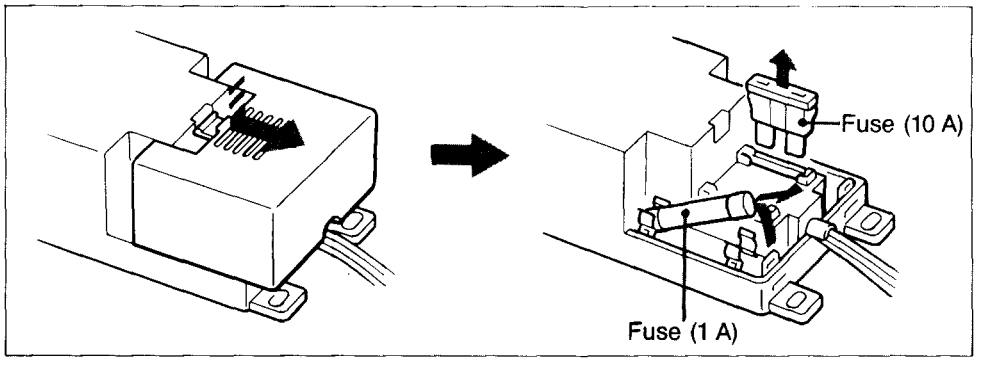
Weight
Approx. 1.6 kg (3 lb 9 oz)

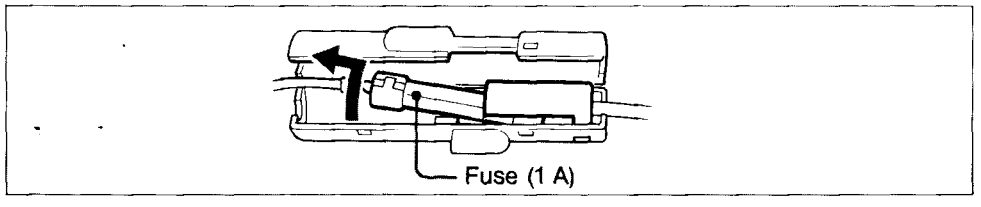
Accessories supplied
Mounting hardware (1 set)
1-ampere fuse (1)
10-ampere fuse (1)

Design and specifications subject to change without notice.

HOW TO REPLACE THE FUSE

If the fuse blows, check the power connection and replace the fuse.





Warning
Use only a 10 ampere fuse and a 1 ampere fuse. Use of a higher amperage fuse may cause serious damage.